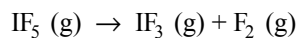
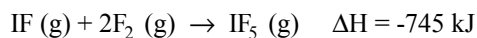


Hess's Law Worksheet

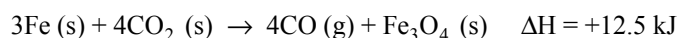
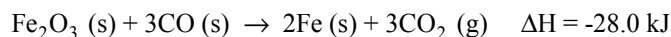
What is the ΔH for the reaction below?



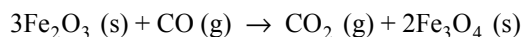
Use the following data to calculate your answer.



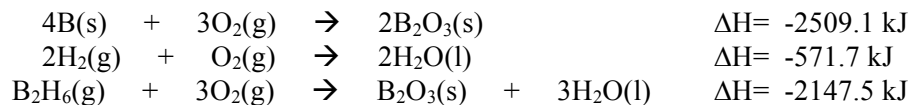
Given the following reactions:



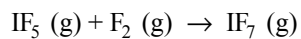
calculate the enthalpy of the reaction of Fe_2O_3 with CO as shown below.



Calculate the standard enthalpy of formation of gaseous diborane (B_2H_6) using the following thermochemical information.

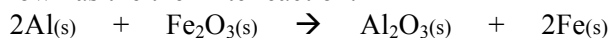


Given the data in the table below, calculate the $\Delta H^\circ_{\text{rxn}}$ for the following reaction.



Substance	$\Delta H_f^\circ (\text{kJ/mol})$
IF (g)	-95
IF ₅ (g)	-840
IF ₇ (g)	-941

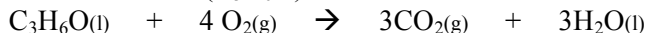
The following reaction is known as the thermite reaction:



This highly exothermic reaction is used for welding massive units, such as propeller for large ships. Using enthalpies of formation values, Appendix 4 (pages A19-A22), calculate ΔH° for this reaction.

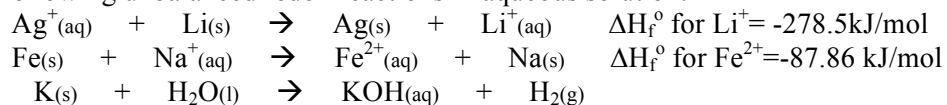
Your gas grill at home burns propane gas, $\text{C}_3\text{H}_8\text{(g)}$. Using standard enthalpies of formation, Appendix 4 (pages A19-A22), calculate the quantity of heat produced when 1.0 g of propane is completely combusted in air.

Complete combustion of 1 mol of acetone ($\text{C}_3\text{H}_6\text{O}$) liberates 1790 kJ:



Using this information together with known heats of formation data, Appendix 4 (pages A19-A22), to calculate the heat of formation of acetone. If 5.0 grams of acetone is combusted, how much energy will be released?

Consider the following unbalanced redox reactions in aqueous solution:



- Balance each of the reactions.
- By using data in Appendix 4 (pages A19-A22), calculate the ΔH° for each of the reactions.
- Based on the ΔH° for the reactions, which do you expect to be unfavorable?
- Use an activity series to predict which of these reactions should occur. Are these results in accordance your conclusion in part c?